

ANALYSIS OF ALTERNATIVES SCOPE

PROGRAM: Maritime Prepositioning Force – Future (MPF(F)), Potential ACAT I program.

REFERENCE: (a) OSD MPF(F) AoA Guidance
(b) MPF(F) Milestone A Acquisition Decision Memorandum of 5 Dec 02
(c) Mission Needs Statement for MPF(F) dated 25 May 01

BACKGROUND: MPF(F) is envisioned to enable transformation of littoral power projection and be a primary sustainment element of the Enhanced Sea Base. MPF(F) also will be a functional replacement for current MPF and T-AVB capabilities. MPF(F) capabilities will enable OMFTS/STOM operations, as established in Joint and Naval doctrine—a fundamentally new and different way to conduct expeditionary operations compared to current amphibious operations.

The MPF(F) will operate as part of a Maritime Prepositioning Group (MPG) and will operate with the elements for a Expeditionary Strike Group (ESG) and/or a Carrier Strike Group (CSG). MPF(F) will integrate land and sea based logistics functions with expeditionary warfare operations afloat. A flexible system of platforms will combine the capability, maneuverability, and endurance of sealift with throughput capacity that will augment sea-based support for ground forces, scalable through the Marine Expeditionary Brigade level. Enhanced speed and flexibility of airlift and high-speed sealift will facilitate rapid marry-up and support for forces and equipment in a forward area with or without the assistance of facilities ashore in the operational area.

Marine and Navy units will deploy by a combination of surface ships and crafts; strategic theater lift; and tactical airlift to embark in the prepositioning system(s)/platform(s) while underway or en route to objective areas.

After the initial deployment, MPF (F) will enable the continuing flow of follow-on Naval and Joint forces and sustainment to their objectives and allow for reconstitution and redeployment of Naval and Joint forces as required by the Regional Commander.

SCOPE OF ANALYSIS: Reference (a) approved by reference (b) is responsive to reference (c) and provides the Department of Defense guidance for the MPF(F) Analysis of Alternatives (AoA). It identifies the minimum platform alternatives for examination during the AoA. Additional programmatic and operational guidance is provided.

PROGRAMMATIC CONSIDERATIONS:

- Review JCC(X) and LHA(R) AoA results with the goal of extracting useful data for application to this study. Examine MPF(F) alternatives and their ability to rapidly employ scalable sea based forces in conjunction with ESG(s).
- Assess manpower reduction investment opportunities, environmental compliance, habitability, survivability and “smart” support technologies being developed by other programs that could be leveraged by the MPF(F) program.
- Consider a range of ship speeds from the current MPS fleet to the speed of the ESG and the CSG. Higher speeds will give greater strategic mobility and may offer greater tactical

flexibility when operating in conjunction with the Fleet. Higher speeds can also generate more wind-over-the-deck to support aircraft operations.

- Examine Propulsion system alternatives appropriate to speed and efficiency.
- The study should identify any expected manpower, personnel and training (MPT) changes over the legacy system. For each alternative, a manpower estimate should be developed in order to determine whether the MPT requirements are executable. The manpower estimates should include manpower to maintain the ship/system while docked at the squadron base, while providing limited support to forward presence forces, and while fully operational in the sea base.
- Incorporate OPNAV approved service life allowances for auxiliary ships for growth in full load displacement and rise in center of gravity (kg) commensurate with a projected 40-year service life.
- Relate ship design to expected US shipyard capabilities.
- Examine ability to transfer containers (Twenty-foot Equivalent Units [TEUs]) to/from strategic and commercial sealift. Assess ability for MPF(F) to 'break-down' container loads for transfer either ashore or to other Naval and/or coalition vessels.
- Examine ability to receive/send standard petroleum products to/from commercial and Navy vessels.
- Identify types of organic air and surface craft that may be necessary for MPF(F) to operate in the sea base.
- Examine passive self defense and survivability features that could affordably provide significant improvement to the MPF(F) capability against the expected threats.
- Examine emerging communications technology and Joint command and control capability, such as the Deployable Joint Command and Control System (DJC2), for an embarked Standing Joint Force Headquarters (SJFHQ) staff by either:
 - (1) Distributing the capability across some/all the ships of the squadron,
 - (2) Providing all the capability on a single ship that would be a MPF(F) variant.
 - (3) Distributing the capability across a mix of MPF(F) ships and CVN, LHA and LHD class warships.
- Identify types of organic air and surface craft that may be necessary for MPF(F) to operate in the sea base. Examine the ability to operate and support fixed-wing and rotary-wing/tiltrotor aircraft. Analysis shall include options for hosting (operations and maintenance) up to the entire MPF(F) MEB ACE on the MPF(F) platforms, and alternatives that distribute the MPF(F) MEB ACE and ESG or CSG aircraft between the MPF(F) platforms, the ESG or CSG platforms, and land basing.
- Examine the cost, capability and risk trade-offs for concurrent fixed-wing and rotary-wing/tiltrotor aircraft operations and simultaneous surface load/offload and flight deck operations.

OPERATIONAL CONSTRAINTS:

- Support MPF tactical and administrative organizations for command, control, and operations.
- Be fully interoperable with ESG/ESF tactical logistics support; administrative organizations for command, control, and operations; and elements of an embarked MAGTF.

- Support but not necessary embark both current and future aviation and surface assault assets including helicopters, tilt-rotor, STOVL fixed wing, UAVs, AAVs, LCAC, and LCU. At-sea transfer from MPF(F) ships to logistics craft and surface combatants shall be assessed, with a minimum capability of sea state 3. Technologies that enable higher sea state operability shall be examined in the AoA. Analyze multiple pathways for assured sea based sustainment of ground forces.
- Be capable of operating anywhere in the open ocean or littoral in a task force/group as part of the Enhanced Sea Base or independently commensurate with its threat levels in peacetime, crisis, and war fighting scenarios. MPF(F) will operate under the theater and area defense umbrellas provided by other Naval/Joint elements.
- Not be constrained by Panama Canal limitations.

ANALYSIS DIRECTOR: Mr. Robert M Souders

ORGANIZATION: Center for Naval Analyses (CNA)

SCHEDULE:

DATE

OVERSIGHT GROUP MEETINGS	Jan 2003 and quarterly following
ANALYSIS RESULTS	Oct 2003
Draft RESULTS	Oct 2003
FINAL BRIEF & REPORT	Jan 2004

SUBMITTED:

Robert B. Keller, USMC
DIRECTOR of Operations (PO) HQ USMC

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DATE

SUBMITTED:

[Signature]
DIRECTOR, Strategic Logistics/Combat Mobility (OPNAV N42)

18 Dec 02
DATE

SUBMITTED:

[Signature]
DIRECTOR, Expeditionary Warfare (OPNAV N75)

10 March 03
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APPROVED:

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DC CD HQMC

2/13/03
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APPROVED:

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DC PP&O HQMC

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APPROVED:

C.W. Moore, Jr.
DCNO (OPNAV N 4)

12-24-02
DATE

APPROVED:

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DCNO (OPNAV N7)

21 March 03
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DASN (Ships)

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